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EXAMINER	
WOODWARD, CHERIE MICHELLE	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/716,580	MOCIKAT, RALPH	
	Examiner	Art Unit	
	CHERIE M. WOODWARD	1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 January 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-9,11-17 and 29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-9,11-17 and 29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Formal Matters

1. Applicants Response and Amendments filed 1/7/2008 are acknowledged and entered. Claims 1-5, 7-9, 11-17 and 29 are pending. Claims 6, 10, 18-28, and 30 have been cancelled by Applicant. In view of Applicant's argument requesting rejoinder of claim 29, as discussed in the interview summary of 12/11/2007, the host cell containing the vector of **claim 29 is REJOINED**. Claims 1-5, 7-9, 11-17, and 29 are under examination. **In light of the rejoinder of claim 29, this Office Action is NON-FINAL.**

Response to Arguments

Claim Objections/Rejections Withdrawn

2. The rejection of claims 1-5, 7-9, 11, 13-17 under 35 U.S.C. 102(b) as being anticipated by Mucke et al., (Gene Therapy. 1997 Feb;4:82-92) are withdrawn.

However, Applicant's arguments directed to the claim of priority to "German patent application No. 19541450", filed 22 April 1997, must be addressed. Applicant argues that the Mucke et al., reference was published in February 1997, and as such, the Mucke et al., reference cannot be cited under 35 USC 102(b) (Remarks, p. 8, fifth paragraph). Applicant incorrectly recites the instant priority document. The German patent application document to which priority is sought in the instant case is 17916892.2, filed 22 April 1997. German patent application No. 19541450 was filed 11 July 1995 by inventor Polack and is a priority document of the '449 patent (prior art cited of record) and is not related in the chain of priority in the instant case. In any event, in order to receive benefit of DE 17916892.2, filed 22 April 1997, Applicant is required to provide a certified translation of the foreign priority document. Although a certified copy of DE 17916892.2 (in German) has been received in the parent case (US Application No. 09/067,026), a certified translation has not been received in either the instant application or the parent case. As such, Applicant cannot rely on the foreign priority document, DE 17916892.2, to overcome a rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Claim Rejections Maintained

Claim Rejections - 35 USC § 112, First Paragraph

Written Description

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-5, 7-9 and 11-17 **remain rejected** under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

Applicant argues that the common components of the vector are provided and that the skilled artisan would have sufficient common knowledge of the common components of the claimed vector and how to acquire them (Remarks, p. 6, last paragraph). In response to the examiner's citation of University of Rochester v. GD Searle & Co, 69 USQP2d 1886 (Fed. Cir. 2004) and Ex parte Kubin, 83 USPQ2d 1410 (BPAI, 2007), Applicant argues that the fact pattern in the instant application is distinguished from that of Rochester or Kubin (Remarks, p. 7, first paragraph). Applicant argues that the DNA sequences encoding a whole or partial antibody constant region are known in the art and described in the specification (Remarks, p. 7, last paragraph). Applicant argues that an artisan would not doubt the inventor's possession of the common components of the claimed vector and would not doubt the inventor's possession of the vector itself (Remarks, p. 7, last paragraph to p. 8, first paragraph). Applicant also points to MPEP 2163 (II)(A)(3)(a)(ii) in support of the argument that the one representative species adequately supports the claimed genus (Remarks, p. 8, second paragraph). Applicant's arguments have been fully considered, but they are not persuasive.

Applicant's arguments are based on the proposition that the genera of claimed vectors can be made by one of skill in the art by obtaining the required components. However, Applicant has not shown or provided any evidence that Applicant was in possession of a sufficient representative number of species of the claimed genera at the time the application was filed. Rather, Applicant has shown that by making, experimenting, and testing the "characteristic components" of the invention, one of skill in the art may thereby obtain possession. The ability to "obtain" possession is distinguished from the requirement that applicant be in possession of the claimed subject matter at the time the application is filed.

When considering whether Applicant has disclosed a sufficient representative number of species, the "representative number of species" means that the species which are adequately described are representative of the entire genus. When there is substantial variation within the genus, one must describe a sufficient variety of species to reflect the variation within the genus. The disclosure of only one species encompassed within a genus adequately describes a claim directed to that genus **only** if the disclosure "indicates that the patentee has invented species sufficient to constitute the gen[us]." See Enzo Biochem, 323 F.3d at 966, 63 USPQ2d at 1615. Further, in The Regents of the University of California v. Eli Lilly

and Co, 119 F.3d 1559, 1568, 43 USPQ2d 1398, 1406 (Fed Cir. 1997) the Court held that the written description requirement not satisfied by merely providing "a result that one might achieve if one made that invention"(see also In re Wilder, 736 F.2d 1516, 1521, 222 USPQ 369, 372-73 (Fed. Cir. 1984) (affirming a rejection for lack of written description because the specification does "little more than outline goals appellants hope the claimed invention achieves and the problems the invention will hopefully ameliorate")).

As previously stated in the Office Action of 18 October 2007, it is well understood that possession may not be shown by merely describing how to obtain possession of members of the claimed genus or how to identify their common structural features (see, Univ. of Rochester v. G.D. Searle & Co., 358 F.3d 916, 927, 69 USPQ2d 1886, 1895 (Fed. Cir. 2004); accord Ex Parte Kubin, 2007-0819, BPAI 31 May 2007, opinion at p. 16, paragraph 1). Applicant's argument that the Rochester and Kubin cases differ on their fact pattern from the instant case does not diminish the case holdings that **possession may not be shown by merely describing how to obtain possession of members of the claimed genus or how to identify their common structural features**. The instant claims and specification do nothing more than suggest various components in the form of generic lists or as a "laundry list" of potential components that one of ordinary skill in the art could piece together to "obtain" possession of the claimed genus of vectors. In this sense, the instant case is on point with Rochester and Kubin because all that has been disclosed is a description of how to obtain possession. See also, Fujikawa v. Wattanasin, 93 F.3d 1559, 1571, 39 USPQ2d 1895, 1905 (Fed. Cir. 1996) (a "laundry list" disclosure of every possible moiety does not constitute a written description of every species in a genus because it would not "reasonably lead" those skilled in the art to any particular species).

In the instant application only one species of the claimed invention is disclosed in the specification (see pages 13-14 of the specification, labeled pages 17 and 18) as a vector comprising pSP72(ΔEV)-mGM-CSF (ΔL) cloned into pSVgpt-huγ1-A5. When one contrasts this species of vector against the claimed genera of vectors and vector components comprising the claimed vectors, the difference in the scope of the singular representative species of vector and the scope of the broader claimed genera becomes clear. Neither the specification nor the art provide a sufficient description to show that Applicant was in possession of vectors comprising a sufficient number of the following components linked together, as claimed: a genera of vectors encoding a **generic genus** cytokine-immunoglobulin fusion proteins; a genera of vectors encoding a **generic genus** of immunoglobulins; a genera of vectors comprising DNA encoding a **generic genus** of cytokines; a genera of vectors encoding a **generic genus** of marker genes; a genera of vectors encoding a **generic genus of enhancers**; a genera

of vectors encoding a **genus of nucleic acids homologous to a region comprising the Cμ or Cκ enhancer**; a genera of vectors encoding a **generic genus** bacterially compatible regulatory units; a genera of vectors encoding **generic genus** of domains from a human immunoglobulin chain; a genera of vectors encoding a **generic genus** of interleukins; a genera of vectors encoding a **generic genus** of interferons; a genera of vectors encoding a **generic genus** of colony-stimulating factors; a genera of vectors encoding a **generic genus** of lymphokines; and a genera of vectors encoding a **generic genus** of growth factors.

The examiner notes specific embodiments of the cytokines IL-2, IL-4, IL-7, IL-12, IL-13, GM-CSF and IFNγ are set forth in claim 16 (which is dependent only on claims 1 and 15), but this claim does not provide a limitation for the genus of enhancers, marker genes, bacterially compatible regulatory units, domains from a human immunoglobulin chain, or even the species from which these cytokines are to be obtained (i.e. human, rat, mouse, cat, dog, goat, cow, chicken, sheep, etc), such that one of ordinary skill in the art would understand that Applicant was in possession of the genera of claimed vectors encoding all generic cytokines from a representative number of species at the time the application was filed. Similarly, claim 17, which is dependent only on claim 1, recites specific marker genes, but does not provide any limitations of the genus of enhancers, bacterially compatible regulatory units, domains from a human immunoglobulin chain, or DNA sequence encoding a cytokine.

Prior art includes Polack et al., US Patent 6,521,449 (18 February 2003, benefit to 12 September 1996, previously cited of record) who teach the BC219-TNFα vector integrated into BL60 cells (EBV-positive human lymphoma cells) capable of expressing TNFα (column 9, lines 23-24; and Table 2). BL60 cells with integrated BC219GM-CSF and BC216-IL6 expressing GM-CSF and IL-6 respectively, are also taught in Table 2. Mucke et al., (Gene Therapy. 1997 Feb;4:82-92, previously cited of record), teach vectors comprising gene constructs of cytokine fusion proteins expressed in malignant B-cells (abstract; p. 82, column 2, first full paragraph, as idiotype/GMCSF fusion proteins). Enhancers comprising enhancers from the human immunoglobulin κ locus, a promoter and polyadenylation site are taught at p. 83, column 1, second full paragraph; and especially Figure 1b, page 85, as immunoglobulin κE3' and κEi. Cytokine genes for IL-6, TNF, and GM-CSF are taught at p. 83, column 1, last paragraph; and Table 1. Marker genes that are selectable in eukaryotic B cells and contain a functional enhancer region are taught at Figure 1b, page 85, including the hygromycin resistance gene (hygR) (see also Figure 1a, p. 84). Vectors preferably containing sequences derived from bacterial vectors (i.e. lacZ) are taught at p. 85, column 1. A vector construct wherein the marker gene lacks an enhancer or contains a non-functional enhancer is taught at p. 85, Figure 1b. Specific regions and base pair sequence length are taught in Figure 1. Mocikat et al., (Immunology. 1995:84:159-163, previously cited of record) teach a vector for

homologous recombination at the Ig locus (Figure 1; paragraph bridging pages 159-160). The vector of Mocikat et al., appears to contain all the elements that Applicants' disclose or claim, with the exception of the incorporation of a cytokine gene. The vector contains a 2.3 kb fragment from the mouse μ intron (Figure 1; and Figure 3, p. 161; see also p. 160, column 1, first full paragraph) (compare instant claims 1 and 12). Kardinal et al., (Eur J Immunol. 1995 Mar; 25(3):792-797, Abstract only), teach integration vectors for antibody chimerization by homologous recombination in hybridoma cells. EP 0675203 (published 4 October 1995) (machine translation into English, previously cited of record) teaches integration vectors for the production of genes encoding recombinant antibodies (translation, specification p. 1, paragraph 1). DE 4406512 (published 16 February 1995) (machine translation into English, previously cited of record) teaches integration vectors for producing genes which encode recombinant antibodies to vectors for producing recombinant antibodies. Tao et al., (Nature. 1993 Apr 22;362(6422):755-8, Abstract only, previously cited of record), teach that by fusing a well-characterized tumor specific antigen, which is an antibody corresponding to the specific idiotype expressed on a murine B cell lymphoma, to GM-CSF, the tumor-derived idiotype can be converted into a strong immunogen capable of inducing idiotype-specific antibodies and of protecting recipient animals from challenge with an otherwise lethal dose of tumor cells.

Other than Applicant's example of a vector comprising pSP72(ΔEV)-mGM-CSF (ΔL) cloned into pSVgpt-huγ1-A5, and the vectors taught in the art (*supra*) the skilled artisan is left to figure out which of the components from the large claimed genera to pick and choose to construct a vector. The specification does not disclose any particular DNA sequences from the genus of cytokines such that one of ordinary skill in the art would understand which species the DNA was to be obtained from or whether DNA encoding specific domains of the cytokines were to be included or excluded (i.e. only domains from the soluble region of the proteins encoded by the DNA) (see In re Smith, 458 F.2d 1389, 1395, 173 USPQ 679, 683 (CCPA 1972) (holding that a subgenus is not necessarily implicitly described by a genus encompassing it and a species upon which it reads)).

In the absence of sufficient recitation of distinguishing characteristics, the specification does not provide adequate written description of the claimed genera of vectors to establish that Applicant was in possession of the vectors in their full scope. One of skill in the art would not recognize from the disclosure that the applicant was in possession of the claimed genus at the time the application was filed. As the Supreme Court has cautioned, "a patent is not a hunting license. It is not a reward for the search, but compensation for its successful conclusion." *Brenner v. Manson*, 383 U.S. 519, 536 [148 USPQ 689] (1966).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-5, 7-9, 11, and 13-17 **remain rejected** and **claim 29 is rejected** under 35 U.S.C. 102(e) as being anticipated by Polack et al., US Patent 6,521,449 (18 February 2003, benefit to 12 September 1996) as evidenced by Mucke et al., (Gene Therapy. 1997 Feb;4:82-92) (previously cited of record), for the reasons of record and the reasons set forth herein.

Applicant argues that Applicant "does not believe" that the prior art teaches the instant claims, as amended, regarding the limitation of "a region of at least 1.5kb" (Remarks, p. 8, last paragraph). Applicant's argument has been fully considered, but it is not persuasive.

The '449 patent teaches "[a] gene construct containing, in functional association, at least: (a) (i) a combination of two enhancer elements of the immunoglobulin kappa locus, namely the kappa intron enhancer (kappa Ei) and the kappa 3' enhancer (kappa E3'); or (ii) a combination of two enhancer elements of the immunoglobulin heavy chain mu locus, namely mu Ei and the mu E3' enhancer region located 3' of C alpha; or (iii) a combination of one or more of these enhancer elements of (ii) together with one or more of the aforementioned elements of the immunoglobulin kappa locus" (column 4, line 39-42). The combination of kappa E3' and kappa Ei enhancers, as taught by the '449, inherently exceed "at least 1.5kb" in length.

Mucke et al., (cited for exemplary purpose only to demonstrate the inherent feature of the '448 patent) demonstrate that kappa E3' is approximately 881bp long and kappa Ei is approximately 1486kb pairs long (p. 85, Figure 1). Absent evidence to the contrary, the combination of kappa E3' and kappa Ei enhancers, as taught by the '449 patent and as exemplified in the BC219 vector of Figure 1 of Mucke et al., are "at least 1.5kb" long. The combination of both kappa enhancer regions meets the limitations of the instant claims, comprising a length of approximately 2.64kb, combined. It is also noted that Polack, inventor of the '449 patent is a co-author of the Mucke et al., paper.

The evidentiary reference is provided to establish inherency of the claimed enhancer region of claim 1(a) (see In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed Cir 1999). It is also noted that there is no requirement that a person of ordinary skill in the art would have recognized the inherent disclosure at the time of invention, but only that the subject matter is in fact inherent in the prior art reference. Schering Corp. v. Geneva Pharm. Inc., 339 F.3d 1373, 1377, 67 USPQ2d 1664, 1668 (Fed. Cir. 2003) (rejecting the contention that inherent anticipation requires recognition by a person of ordinary skill in the art before the critical date and allowing expert testimony with respect to post-critical date clinical trials to show inherency); see also Toro Co. v. Deere & Co., 355 F.3d 1313, 1320, 69 USPQ2d 1584, 1590 (Fed. Cir. 2004)("[T]he fact that a characteristic is a necessary feature or result of a prior-art embodiment (that is itself sufficiently described and enabled) is enough for inherent anticipation, even if that fact was unknown at the time of the prior invention."); Atlas Powder Co. v. Ireco, Inc., 190 F.3d 1342, 1348-49 (Fed. Cir. 1999) ("Because sufficient aeration' was inherent in the prior art, it is irrelevant that the prior art did not recognize the key aspect of [the] invention.... An inherent structure, composition, or function is not necessarily known."); SmithKline Beecham Corp. v. Apotex Corp., 403 F.3d 1331, 1343-44, 74 USPQ2d 1398, 1406-07 (Fed. Cir. 2005) (holding that a prior art patent to an anhydrous form of a compound "inherently" anticipated the claimed hemihydrate form of the compound because practicing the process in the prior art to manufacture the anhydrous compound "inherently results in at least trace amounts of" the claimed hemihydrate even if the prior art did not discuss or recognize the hemihydrate).

Claim 29 is drawn to a malignant B cell host cell containing a vector according to claim 1 in integrated form and capable of expression. The '449 patent teaches the BC219-TNFα vector integrated into BL60 cells (EBV-positive human lymphoma cells) capable of expressing TNFα (column 9, lines 23-24; and Table 2). BL60 cells with integrated BC219GM-CSF and BC216-IL6 expressing GM-CSF and IL-6 respectively, are also taught in Table 2.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1-5, 7-9, 11-13, and 15-17 **remain rejected** under 35 U.S.C. 103(a) as being unpatentable over Polack et al., US Patent 6,521,449 (18 February 2003, benefit to 12 September 1996), Levy et al., US Patent 6,099,846 (8 August 2000, benefit to 14 April 1995), and Gillies et al., US Patent 5,650,150 (22 July 1997, benefit to 7 November 1991), as evidenced by Mucke et al., (Gene Therapy. 1997 Feb;4:82-92) (previously cited of record), for the reasons of record and the reasons set forth herein.

Applicant argues that neither the '449 patent nor the secondary references teach the limitation of the region of at least 1.5 kb which is homologous to a region of the μ intron or the k intron recited in claim 1(a) (Remarks, p. 9, third paragraph). Applicant's argument has been fully considered, but is not persuasive.

As stated above, the '449 patent teaches "[a] gene construct containing, in functional association, at least: (a) (i) a combination of two enhancer elements of the immunoglobulin kappa locus, namely the kappa intron enhancer (kappa Ei) and the kappa 3' enhancer (kappa E3'); or (ii) a combination of two enhancer elements of the immunoglobulin heavy chain mu locus, namely mu Ei and the mu E3' enhancer region located 3' of C alpha; or (iii) a combination of one or more of these enhancer elements of (ii) together with one or more of the aforementioned elements of the immunoglobulin kappa locus" (column 4, line 39-42). The combination of kappa E3' and kappa Ei enhancers, as taught by the '449, inherently exceed "at least 1.5kb" in length.

Mucke et al., (cited for exemplary purpose only to demonstrate the inherent feature of the '448 patent) demonstrate that kappa E3' is approximately 881bp long and kappa Ei is approximately 1486kb pairs long (p. 85, Figure 1). Absent evidence to the contrary, the combination of kappa E3' and kappa Ei enhancers, as taught by the '449 patent and as exemplified in the BC219 vector of Figure 1 of Mucke et al., are "at least 1.5kb" long. The combination of both kappa enhancer regions meets the limitations of the instant claims, comprising a length of approximately 2.64kb, combined. It is also noted that Polack, inventor of the '449 patent is a co-author of the Mucke et al., paper.

The evidentiary reference is provided to establish inherency of the claimed enhancer region of claim 1(a) (see In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed Cir 1999). It is also noted that there is no requirement that a person of ordinary skill in the art would have recognized the inherent disclosure at the time of invention, but only that the subject matter is in fact inherent in the prior art reference. Schering Corp. v. Geneva Pharm. Inc., 339 F.3d 1373, 1377, 67 USPQ2d 1664, 1668 (Fed. Cir. 2003) (rejecting the contention that inherent anticipation requires recognition by a person of ordinary skill in the art before the critical date and allowing expert testimony with respect to post-critical date clinical trials to show inherency); see also Toro Co. v. Deere & Co., 355 F.3d 1313, 1320, 69 USPQ2d 1584, 1590 (Fed. Cir. 2004)("[T]he fact that a characteristic is a necessary feature or result of a prior-art embodiment (that is itself sufficiently described and enabled) is enough for inherent anticipation, even if that fact was unknown at the time of the prior invention."); Atlas Powder Co. v. Ireco, Inc., 190 F.3d 1342, 1348-49 (Fed. Cir. 1999) ("Because sufficient aeration' was inherent in the prior art, it is irrelevant that the prior art did not recognize the key aspect of [the] invention.... An inherent structure, composition, or function is not necessarily known."); SmithKline Beecham Corp. v. Apotex Corp., 403 F.3d 1331, 1343-44, 74 USPQ2d 1398, 1406-07 (Fed. Cir. 2005) (holding that a prior art patent to an anhydrous form of a compound "inherently" anticipated the claimed hemihydrate form of the compound because practicing the process in the prior art to manufacture the anhydrous compound "inherently results in at least trace amounts of" the claimed hemihydrate even if the prior art did not discuss or recognize the hemihydrate).

Further, the express, implicit, and inherent disclosures of a prior art reference may be relied upon in the rejection of claims under 35 U.S.C. 102 or 103. "The inherent teaching of a prior art reference, a question of fact, arises both in the context of anticipation and obviousness." In re Napier, 55 F.3d 610, 613, 34 USPQ2d 1782, 1784 (Fed. Cir.1995) (affirmed a 35 U.S.C. 103 rejection based in part on inherent disclosure in one of the references). See also In re Grasselli, 713 F.2d 731, 739, 218 USPQ 769, 775 (Fed. Cir. 1983).

11. Claims 1-5, 7-9 and 11-17 **remain rejected** under 35 U.S.C. 103(a) as being unpatentable over Mucke et al., (Gene Therapy. 1997 Feb;4:82-92), Polack et al., US Patent 6,521,449 (18 February 2003, benefit to 12 September 1996) and Mocikat et al., (Immunology. 1995:84:159-163) for the reasons of record and the reasons set forth herein.

Applicant argues that none of the references teach limitation of the region of at least 1.5 kb which is homologous to a region of the μ intron or the k intron recited in claim 1(a) (Remarks, p. 9, third paragraph). Applicant also acknowledges the examiner's reply that Mocikat et al., teach the 2.3Kb fragment of the mouse μ intron. However, Applicant argues that there is "nothing, either in the cited references or in the general knowledge an artisan would possess, that would motivate the artisan to modify (and particularly to shorten) the 2.3Kb intron sequence" (Remarks, p. 9, last paragraph). Applicant's arguments have been fully considered, but they are not persuasive.

Applicant's response to the discussion regarding the 2.3Kb intron sequence taught by Mockitat demonstrates a misunderstanding of the claims, as written. The claims recite "at least 1.5kb." This reads on a sequence of 1.5kb or larger. The examiner is not required to provide motivation for a 2.3kb sequence taught by the art when the limitations of Applicant's claims to "at least 1.5kb" clearly falls within the range of what is taught in the prior art. The 2.3kb region is clearly within the limitation of the instant claims and as such, no explanation or motivation is required because no modification of the prior art is necessary.

Mucke et al., clearly demonstrates that kappa E3' is approximately 881bp long and kappa Ei is approximately 1486kb pairs long (p. 85, Figure 1). The combination of kappa E3' and kappa Ei enhancers, as taught by the '449 patent and as exemplified in the BC219 vector of Figure 1 of Mucke et al., are "at least 1.5kb" long. The combination of both kappa enhancer regions meets the limitations of the instant claims, comprising a length of approximately 2.64kb, combined.

Conclusion

NO CLAIM IS ALLOWED.

THIS OFFICE ACTION IS NON-FINAL.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cherie M. Woodward whose telephone number is (571) 272-3329. The examiner can normally be reached on Monday - Friday 9:00am-5:30pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Manjunath N. Rao can be reached on (571) 272-0939. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cherie M. Woodward/
Examiner, Art Unit 1647